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REMARKS

Reexamination and reconsideration of this application in view of the present response with amendment is kindly requested. By this amendment, Claims 11, 19, and 20, were amended. After this response with amendment, Claims 11-12 and 14-20 continue to be pending in this application.

Missing Claim Rejections

Applicants wish to point out that the present Office Action did not reject pending Claims 17-18 and 20. This appears to be an oversight. Specifically, the present Office Action, mailed on May 11, 2007, indicated that 1) it was responsive to communication filed on August 14, 2006, and 2) Claims 11, 12, 14-16, and 19, are pending in the application. However, Applicants' communication, that was mailed on August 7, 2006, amended the claims such that Claims 11, 12, and 14-20, remain pending in the application. Therefore, it appears that the present Office Action did not address pending Claims 17-18 and 20.

Applicants, notwithstanding the apparent oversight in the Office Action, will attempt to respond to the present Office Action as if the claim rejections included all of the pending Claims 11, 12, and 14-20.

Claim Rejections - 35 USC § 102(b)

The Examiner rejected Claims 11, 12, 14-16, and 19, under 35 U.S.C. 102(b) as being anticipated by FAULK, U.S. Patent No. 5,459,652. The Examiner cites 35 U.S.C. § 102(b) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected claims.¹

Applicants have amended independent Claims 1, 19, and 20, to more clearly and distinctly recite the presently claimed invention. Specifically, Claims 1, 19, and 20, now recite that the two-way voltage regulator comprises a transistor with one terminal coupled to the first supply voltage and another terminal coupled to the second supply voltage, which, in

¹ See MPEP §2131 (Emphasis Added) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

a first operation mode allows current to flow from the first supply voltage to the second supply voltage and, in a second operation mode allows current to flow from the second supply voltage to the third terminal of the starting circuit.

Support for the amended claim language may be found in the drawing figures and in the specification as originally filed. No new matter was added by the amendment to the claims.

For example, see FIGs. 3 and 4, showing the two-way voltage regulator comprising the transistor M3. Also see, for example, the discussion in the specification, on page 5, lines 21-25, and continuing to page 6, line 9. According to the present invention, the FET transistor M3 can operate in two different modes depending on whether VCC is low or high. To start with, when VCC is low, the transistor M3 has its drain at, and conducts current from, terminal 30 (VCC2) to the capacitor Cvcc thereby charging the capacitor. The voltage in this case is being supplied by Vin through, in one embodiment shown in FIG. 3, the resistor RS, or, in a second embodiment shown in FIG. 4, the switch M2. The voltage at terminal 30 (VCC2) therefore during this mode of operation is generally tracking the charging voltage (VCC) of the capacitor Cvcc.

When VCC reaches a high level, the transistor M3 operates in a different mode where the voltage at terminal 30 (VCC2) is substantially equal to the voltage across the zener diode Dz2 less the gate-source voltage across M3. This voltage is relatively independent from increases to the VCC voltage.

Overview of Differences Between The Presently Claimed Invention And FAULK

The presently claimed invention includes a two-way voltage regulator comprising a transistor M3. A main difference between the present invention and the teachings of FAULK is that, in the present invention, the FET transistor M3 is located between terminal 30 (where VCC2 supplies voltage to the circuits of the switching power supply) and the coil-diode-resistor (W2b-D1-R1) circuit components that supply VCC power from the coil of the transformer. This transistor M3 can operate in two separate and different modes to help regulate the voltage supplied at terminal 30 (VCC2) depending on whether VCC is low or high.

FAULK, on the other hand, does not have a transistor between the coil-resistor-diode (42, 44, 46) and the VCC input to the control circuits 36 of the switching power supply.

As stated in the present application, transients generated by the coil on top of the VCC voltage can cause damage to the control circuits, or may cause system shut-down due to an over-voltage protection circuit. Adjustments of the components, such as the value of R1, may not be possible to cover all cases. Therefore, according to the present invention, the FET transistor M3 can operate in two different modes depending on whether VCC is low or high. To start with, when VCC is low, the transistor M3 has its drain at, and conducts current from, terminal 30 to the capacitor Cvcc thereby charging the capacitor. The voltage in this case is being supplied by Vin through, in one embodiment shown in FIG. 3, the resistor RS, or, in a second embodiment shown in FIG. 4, the switch M2. The voltage at terminal 30 therefore during this mode of operation is generally tracking the charging voltage of the capacitor Cvcc.

When VCC reaches a high level, the transistor M3 operates in a different mode where the voltage at terminal 30 is substantially equal to the voltage across the zener diode Dz2 less the gate-source voltage across M3. This voltage is relatively independent from increases to the VCC voltage, thereby generally isolating the terminal 30 (VCC2) voltage from the transients occurring on VCC. This advantage of the present invention is not taught or suggested by FAULK.

Accordingly, in view of the amendment and remarks above, Applicants believe that the amended independent Claims 11, 19, and 20, and all the dependent Claims 12, and 14-18, depending therefrom, respectively, now are clearly not taught, anticipated, or suggested by FAULK. Applicants therefore believe that all of the pending claims now recite in allowable form. In view of the amendment and remarks above, Applicants request that the Examiner allow all of the pending Claims 11-12, and 14-20, to issue in a patent.

Conclusion

The foregoing is submitted as full and complete response to the Official Action mailed May 11, 2007, and it is submitted that Claims 11-12 and 14-20 are in condition for allowance. Reconsideration of the rejections is requested. Allowance of Claims 11-12 and 14-20 is earnestly solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

If the Examiner believes that there are any informalities that can be corrected by Examiner's amendment, or that in any way it would help expedite the prosecution of the patent application, a telephone call to the undersigned at (561) 989-9811 is respectfully solicited.

The Commissioner is hereby authorized to charge any fees that may be required or credit any overpayment to Deposit Account 50-1556.

In view of the preceding discussion, it is submitted that the claims are in condition for allowance. Reconsideration and re-examination is requested.

Respectfully submitted,

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